

Non-CO₂ Greenhouse Gases: High-GWP Gases

Source/Sectors: Substitution of ODS/End-uses of Consumer Products and Specialty Products

Technology: Substitution with lower GWP HFCs (C.1.2.2.1)

Description of the Technology:

HFC-152a possesses a lower flammability risks than hydrocarbons and dimethyl ether as well as low GWP of 120. Therefore, it is expected to be a good replacement for HFC-134a (USEPA, 2001).

Effectiveness: Good

Implementability: Good

Reliability: This option is very effective for the emission reductions from the aerosol sectors (USEPA 2004).

Maturity: HFC-152a has been in market for products such as electronic equipment dusters, boat and safety “air” horns, and tire inflators (IEA, 2003; USEPA, 2001). It is also used as a propellant for laboratory and experimental uses (IEA, 2003; IEA GHG, 2001). The incremental maximum market penetration of this option is assumed to be 50% in 2020 (USEPA, 2006b).

Environmental Benefits: HFCs emission reduction

Cost Effectiveness:

Technology	Lifetime (yrs)	MP (%)	RE (%)	TA (%)	Capital cost	Annual cost	Benefits
Substitution with lower GWP HFCs ¹	10	25	91	48	\$0.75	-\$2.52	\$0.00

Note: MP: market penetration; RE: reduction efficiency; TA: technical applicability; costs are in year 2000 US\$/MT_{CO2-Eq}.

1: USEPA (2001), IEA (2003), & USEPA (2004)

Industry Acceptance Level: Good

Limitations: HFC-152a possesses moderate flammability risks that might not be viable in some applications; it is assumed that this technical option potentially abates 60% of HFC-134a emissions, which accounts for 80% of total non-MDI aerosol emissions (IEA, 2003).

Sources of Information:

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